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DORITY & MANNING, P.A. POST OFFICE BOX 1449 GREENVILLE, SC 29602-1449			EXAMINER AUGHENBAUGH, WALTER	
			ART UNIT 1794	PAPER NUMBER
			MAIL DATE 10/18/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/687,004

Applicant(s)

URLAUB ET AL.

Examiner

Walter B. Aughenbaugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 34-49 is/are pending in the application.
- 4a) Of the above claim(s) 36-38 and 49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34,35 and 39-48 is/are rejected.
- 7) ☒ Claim(s) 47 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of species (i) in the reply filed on August 9, 2007 is acknowledged.
2. Claims 36-38 and 49 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 9, 2007.

### *Specification*

3. The abstract of the disclosure is objected to because phrases that can be implied such as "is generally disclosed" (lines 2-3) should not be included in the abstract, and because the abstract does not accurately describe the claimed subject matter: the claims require nanoparticles, not that the particles "can be nanoparticles" (line 3), and the claims require that the nanoparticles are metal modified, not that the nanoparticles "may be unmodified or modified by being associated with metal ions" (line 4).

Correction is required. See MPEP § 608.01(b).

### *Claim Objections*

4. Claim 47 is objected to because of the following informalities: a word is missing between "where" and "paper" (the first instance of "paper") in claim 47. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claim 48 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation "wherein the paper product is wrapped around a cylindrical core" renders the claim indefinite because the metes and bounds of the structure intended to be recited by this recitation cannot be ascertained because it is unclear whether or not Applicant intends to recite the cylindrical core as a component of the claimed package. The language of the claim indicates that the cylindrical core is not required to be a component of the claimed package: the recitation "is wrapped around a cylindrical core" does not require that the cylindrical core is a component of the claimed package in its final form.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 34, 35, 39-41 and 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al. (USPN 6,740,406) in view of Elias (USPN Re. 32,957).

In regard to claim 34, Hu et al. teach an absorbent article, such as a diaper or a sanitary napkin, comprising absorbent material (col. 1, lines 15-17 and col. 3, lines 29-45) where the absorbent material (the combination of the activated carbon particles and the masking agent particles, col. 2, lines 43-56 and col. 1, lines 31-42) comprises metal modified nanoparticles having a particle size of from about 0.25 to about 0.6 microns (col. 2, lines 9-28), a range that overlaps with the claimed effective particle diameter range of less than about 500 nanometers (the nanoparticles are metal modified in the embodiment where the nanoparticles are minerals that are in the form of the salt of various metals such as iron, col. 2, lines 18-26). Hu et al. teach that the metal modified nanoparticles form micropores or channels for passage of gas to the activated carbon particles, which improves the transport of odoriferous agents through the absorbent material, which improves the effectiveness of the odor absorption of the absorbent material (col. 2, lines 43-48 and 52-55: for this same reason, the metal modified nanoparticles are configured to neutralize gaseous or odorous compounds that enter the absorbent article, col. 2, lines 43-56 and col. 1, lines 31-42).

Hu et al. fail to explicitly teach that the absorbent article comprises a packaging material that encloses a paper product and that defines a headspace therebetween.

Elias, however, discloses the structure and composition of a diaper or sanitary napkin (see entire document). Elias discloses that the diaper comprises pockets 22 that each comprise a membrane 28 that forms each of the pockets 22 where the a suitable material for the membrane 28 is paper (col. 9, lines 32-46 and col. 3, lines 32-46 and Fig. 2 and 3) and that each pocket comprises a mixture of absorbent particles and introfying particles (col. 3, lines 50-52, col. 1, line 60-col. 2, line 10, col. 8, lines 57-63 and Fig. 2 and 3) where the introfying particles function

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to preserve the interstices around the absorbent particles thereby insuring that liquid impinging upon the pockets 22 will have access to all of the absorbent particles, thereby improving the effectiveness of the odor absorption of the absorbent material (col. 8, lines 57-63). Therefore, since the metal modified nanoparticles of Hu et al. perform the equivalent function that is performed by the introfying particles of Elias of forming interstices around the absorbent particles thereby insuring that liquid impinging upon the absorbent particles will have improved access to the absorbent particles (col. 2, lines 43-48 and 52-55 of Hu et al.) (and since the absorbent particles of Hu et al. perform the equivalent function that is performed by the absorbent particles of Elias), one of ordinary skill in the art would have recognized to have used the absorbent material of Hu et al. (the combination of the activated carbon particles of Hu et al. and the masking agent particles of Hu et al.) as the mixture of particles of Elias in the diaper or sanitary napkin (absorbent article) of Elias.

The absorbent article that results from the proposed combination of Hu et al. and Elias comprises a paper product (membrane 28 of each of the pockets 22, col. 9, lines 32-46 and col. 3, lines 32-46 and Fig. 2 and 3 [of Elias]), a packaging material (the combination of outer layers 12 and 14, col. 7, lines 38-55 and Fig. 2 and 3 [of Elias]) that encloses the paper product (Fig. 2 and 3 of Elias) and that defines a headspace therebetween (for example, the space between the right ends of items 14 and 16 and item 12 in Fig. 3 of Elias). The metal modified nanoparticles are configured to neutralize gaseous or odorous compounds within the headspace (col. 8, lines 57-63 of Elias and col. 2, lines 43-56 and col. 1, lines 31-42 of Hu et al.). The combination of the paper product, the packaging material, and the metal modified nanoparticles correspond to the claimed package (because claim 34 requires that the package comprises only the claimed paper product,

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the claimed packaging material, and the claimed metal modified nanoparticles). Alternatively, or furthermore, the packaging material (the combination of outer layers 12 and 14, col. 7, lines 38-55 and Fig. 2 and 3 [of Elias]) corresponds to a package.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the absorbent material of Hu et al. (the combination of the activated carbon particles of Hu et al. and the masking agent particles of Hu et al.) as the mixture of particles of Elias in the diaper or sanitary napkin (absorbent article) of Elias since the metal modified nanoparticles of Hu et al. perform the equivalent function that is performed by the introfying particles of Elias of forming interstices around the absorbent particles thereby insuring that liquid impinging upon the absorbent particles will have improved access to the absorbent particles, and since the absorbent particles of Hu et al. perform the equivalent function that is performed by the absorbent particles of Elias.

In regard to claim 35, the position of the metal modified nanoparticles of the absorbent article that results from the proposed combination of Hu et al. and Elias is such that the metal modified nanoparticles are positioned on the inside surface of the packaging material (the inside surface of the combination of outer layers 12 and 14, Fig. 2 and 3 of Elias).

In regard to claims 39 and 40, suitable materials for the metal modified nanoparticles of the absorbent article that results from the proposed combination of Hu et al. and Elias are silica, alumina, magnesium oxide, titanium dioxide and zinc oxide (col. 2, lines 9-28 of Hu et al.).

In regard to claim 41, iron is a suitable metal of the metal modified nanoparticles (col. 2, lines 23-26 of Hu et al.: both iron (II) and iron (III) fall within the teaching of "iron" of Hu et al.).

In regard to claims 43 and 44, the surface area of a sample of particles depends upon the average size of the particles, and the surface area of the metal modified nanoparticles of Hu et al. will determine the extent to which the metal modified nanoparticles form micropores or channels for passage of gas to the absorbent particles, which determines the odor absorption capability of the absorbent material (col. 2, lines 43-48 and 52-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the average size of the metal modified nanoparticles in order to achieve the desired surface area, and therefore the desired odor absorption capability of the absorbent material, depending on the particular desired end result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). MPEP 2144.05 II.B.

Furthermore, or alternatively, claims 43 and 44 recite properties of the metal modified nanoparticles. “[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art’s functioning, does not render the old composition patentably new to the discoverer.” *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). In *In re Crish*, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004), the court held that the claimed promoter sequence obtained by sequencing a prior art plasmid that was not previously sequenced was anticipated by the prior art plasmid which necessarily possessed the same DNA sequence as the claimed oligonucleotides. The court stated that “just as the discovery of



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properties of a known material does not make it novel, the identification and characterization of a prior art material also does not make it novel.” Id. MPEP 2112. The claimed surface area follows from the size of the nanoparticles used (this is at least suggested [if not stated] by Applicant’s specification).

In regard to claim 45, the metal modified nanoparticles of the absorbent article that results from the proposed combination of Hu et al. and Elias comprise unmodified nanoparticles (coloring agent) blended with the metal modified nanoparticles (col. 2, lines 9-18 of Hu et al.).

In regard to claim 46, the paper product of the absorbent article that results from the proposed combination of Hu et al. and Elias (membrane 28 of each of the pockets 22, col. 9, lines 32-46 and col. 3, lines 32-46 and Fig. 2 and 3 [of Elias]) is a tissue product (col. 3, lines 32-37 of Elias).

In regard to claim 47, the paper product of the absorbent article that results from the proposed combination of Hu et al. and Elias (membrane 28 of each of the pockets 22, col. 9, lines 32-46 and col. 3, lines 32-46 and Fig. 2 and 3 [of Elias]) corresponds to a paper towel.

In regard to claim 48, the structure of the paper product (membrane 28) of the absorbent article that results from the proposed combination of Hu et al. and Elias is such that it corresponds to the structure that the paper product would have if it were wrapped around a cylindrical core (Fig. 3 of Elias).

9. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hu et al. (USPN 6,740,406) in view of Elias (USPN Re. 32,957) and in further view of Sugiyama et al. (USPN 6,372,333).

Hu et al. and Elias teach the package as discussed above in regard to claim 34.

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Hu et al. disclose that silica nanoparticles is a suitable material for the metal modified nanoparticles that form micropores or channels for passage of gas to the absorbent particles (col. 2, lines 9-28 of u et al.) of the absorbent article that results from the proposed combination of Hu et al. and Elias. Hu et al. teach that the metal modified nanoparticles are minerals that are in the form of the salt of various metals (col. 2, lines 18-26).

Hu et al. and Elias fail to explicitly teach that copper is a suitable metal ion for the minerals that are in the form of the salt of various metals of Hu et al.

Sugiyama et al., however, disclose that copper-modified inorganic porous materials have an odor preventive effect due to the copper modification. Therefore, one of ordinary skill in the art would have recognized to have used copper-modified silica nanoparticles as the metal modified silica nanoparticles of the package of Hu et al. and Elias since copper-modified inorganic porous materials have an odor preventive effect due to the copper modification as taught by Sugiyama et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used copper-modified silica nanoparticles as the metal modified silica nanoparticles of the package of Hu et al. and Elias since copper-modified inorganic porous materials have an odor preventive effect due to the copper modification as taught by Sugiyama et al.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is (571) 272-

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1488. While the examiner sets his work schedule under the Increased Flexitime Policy, he can normally be reached on Monday-Friday from 8:45am to 5:15pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Walter B. Aughenbaugh

10/15/07

*Walter B. Aughenbaugh*  
10/15/07